TITLE OF THE INVENTION

Saturday, February 09, 2002

"THERMANGEL"

EXTERNAL BODY TEMPERATURE REGULATOR

Background of the Invention

This invention was designed on November 3, 2001. Its conception began over 5 years ago, while working as a nurse in a community hospital. I was taking care of a patient whose temperature had climbed to 104 degrees fahrenheit. The standard protocol for this patient was to apply ice packs to the groin and axilla. However, I decided to try a different approach and it worked beautifully. And this is how the invention began.

DESCRIPTION OF PRIOR ART

To describe the prior art of thermoregulation intervention is two part. I will describe how hyperthermia/hypothermia was previously treated as well as the closest cousin to this design.

Hyperthermia is a condition where the temperature is too high. This is commonly found in sepsis, a massive infection state where the body begins to shut down from the illness. Hyperthermia is also found in drug reactions, heatstroke, thyroid disorders, alcohol withdrawal and many other illnesses. It is commonly treated with tylenol , ice baths, cooling blankets and ice packs to the groin and axilla (underarms). These approaches are both problematic and costly, as well as ineffective for any length of time if at all. Usually, when someone is hyperthermic, they are critically ill or near death. It is for this reason that this patent needs an expedited review, as we have an aging population and soaring medical expenses, we need all of the cost-effective means of treating illness we can get.

Hypothermia is a condition where the temperature of the body is too low. This hapens due to exposure of the elements, near drownings, and accidental exposures. The current techniques used to treat this condition are gastric lavage, which is heated water flushed through the stomach to heat the body. It is the idea to heat from the inside out as you would not want to send cold blood to the heart or brain as this increases the likelihood of mortality.

The closest designs I could find were used for other purposes. For example, the "Chillow" is a flat, thin product placed in between the pillow and the pillowcase to keep your pillowcase cool and to treat minor heat related problems such as sunburn and backaches. It is not designed for clinical use nor would it be able to affect a truly hyperthermic patient as it is not equipped for that degree of thermoregulation. Also, it was not designed with a diagnostic or clinical capacity in mind. There is also a product that heats from the palm of the hand. There also various cooling devices used for coolers that are small, blue ice packs. You may have one in your home. My device is different in that it reduces or raises the body temperature and maintains it. You must be very careful in that you do not lower or

raise the temperature too much and that the achieved temperature is maintained.

SUMMARY OF THE INVENTION

The Thermangel is a thermoregulating unit that resembles a pillow. The patient lays on the pillow and is thermoregulated by lying on the pillow by way of cooling or heating the posterior portion of the neck, head and hairline. The pillow has three compartments with an insulative lining, gel layer and thermoregulatory layer. The pillow has an attached probe on the right or left side of the with an earplug or axillary probe to monitor the patient's temperature. There is also a cord attached to the apparatus that connects to the wall unit and interprets the patient response. Another cord then attaches to the electrical outlet for power supply. This display could also be directly on the unit or at a remote location for ease of monitoring. The wall unit displays the patients response such as vital signs, time of therapy, goal temperature, heart rate, respirations, and even alarm functions. In addition, a conducting substance could be applied to the patient to speed the thermocorrection process.

DETAILED DESCRIPTION OF THE DRAWINGS

The thermal medical device has a hollow outer insulative layer (figure 1a). Wool or any insulating substance or material has long been used for its insualtive qualities for both heat and cold. The next layer (figure 2a) is an opening for the gel layer. The device and its subcomponents are all made of a vinyl polymer or similar thermoconductive material. The next layer (figure 3a) is composed of a thermoconductive material is filled with a substance to help radiate the heat or cold from the patient and is shaped to fit in the first layer with room left for the actual heating or cooling apparatus (figure 4a). The inner layer (figure 5a) is the compartment for the actual thermoregulatory apparatus, either ice, a cold pack or another cooling device(figure 6a). The heating thermoregulatory apparatus (figure 7a) may also be used in this compartment in the situation of hypothermia. There are various types of thermoregulatory devices which may be used for the heating process, such as heated water or any other heated substance. On the right or left side of the device is a cord (figure 8a) which connects to either the wall display unit (figure 9a) or attached digital display device (figure 10a). The wall display unit then has a power cord (figure 11a) which connects to a standard electical outlet (figure 11b). In addition, you can also construct a remote monitoring apparatus (figure 12a) to see the patient progress. The display unit will show the patient's (figure 13a) temperature, and other pertinent data regarding the patient's condition such as heart rate, respirations, length of therapy time and change of temperature, as well as the desired temperature to be achieved. The temperature probe(figure 14a-b-c) could be either applied to the ear or axilla of the patient as well the forehead if clinical conditions warrant such use. The earprobe could be shaped like around the base of the ear or like an earplug. The

axillary probe could be a probe that is permanently placed for constant monitoring. These devices would be constructed with a plastic material similar to those found in the market today. This allows for constant monitoring of the patient.